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# ***WATER SUPPLY SUMMARY AND OUTLOOK FOR OREGON***

Prepared by

**U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE**

Collaborating with

**OREGON STATE UNIVERSITY**

and

**STATE ENGINEER of OREGON**

Data included in this report were obtained by the agencies named above  
in cooperation with other Federal, State and private organizations.

AS OF  
**OCT. 1, 1971**



Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters of key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

#### PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

| STATE              | ADDRESS   |
|--------------------|---|
| Alaska             | P. O. Box "F", Palmer, Alaska 99645                                 |
| Arizona            | 6029 Federal Building, Phoenix, Arizona 85025                       |
| Colorado (N. Mex.) | 12417 Federal Building, Denver, Colorado 80202                      |
| Idaho              | Room 345, 304 N. 8th. St., Boise, Idaho 83702                       |
| Montana            | P. O. Box 970, Bozeman, Montana 59715                               |
| Nevada             | P. O. Box 4850, Reno Nevada 89505                                   |
| Oregon             | 1218 S. W. Washington St., Portland, Oregon 97205                   |
| Utah               | 4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111 |
| Washington         | 360 U.S. Court House, Spokane, Washington 99201                     |
| Wyoming            | P. O. Box 2440, Casper, Wyoming 82601                               |

#### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



# **WATER SUPPLY SUMMARY AND OUTLOOK FOR OREGON**

and  
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

*Issued*

OCTOBER 8, 1971

*Issued by*

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ADMINISTRATOR  
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WASHINGTON, D C

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# WATER SUPPLY SUMMARY AND OUTLOOK

## for OREGON

October 1, 1971

Very good, excellent, and outstanding were the words expressed by Oregon water users to describe water supplies this past summer. These conditions were true for most of the state except in northcentral Oregon where supplies were close to normal.

The excellent winter snowpack provided very good streamflow. A cool spring and early summer kept water requirements low and, combined with the streamflow, provided these above-average supplies.

Even though extremely warm weather was experienced in August, drying mountain soils, rains since September 1 have replaced much of the moisture, and soil moisture conditions are close to normal at this time.

Streamflow this past summer was excellent, and in most cases exceeded the high volumes forecast last spring. Typical flows\*, as percent of the 1953-67 average versus April 1 forecasts, are as follows:

|                                  | <u>Period</u> | <u>Obs.<br/>Flow</u> | <u>April 1<br/>Forecast</u> |
|----------------------------------|---------------|----------------------|-----------------------------|
| Owyhee Res. net Inflow           | Apr-Sept      | 168%                 | 127%                        |
| Umatilla near Pendleton          | Apr-Sept      | 93%                  | 100%                        |
| Grande Ronde at La Grande        | Apr-Sept      | 111%                 | 99%                         |
| Willamette, Mid. Fk. blw. N. Fk. | Apr-Sept      | 136%                 | 129%                        |
| Upper Klamath Lk. net Inflow     | Apr-Sept      | 134%                 | 115%                        |
| Williamson below Sprague         | Apr-Sept      | 132%                 | 119%                        |
| Rogue at Raygold                 | Apr-July      | 138%                 | 118%                        |
| Crane Prairie net Inflow         | Apr-July      | 132%                 | 128%                        |

Carryover storage in Oregon reservoirs continues, as in the past several years, to be excellent. October 1 storage in 25 reservoirs is 160% of average. This compares to 130% last year. These reservoirs are 60% of capacity and chances are very good for many of them filling next spring, with an average snow accumulation this winter.

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continued -

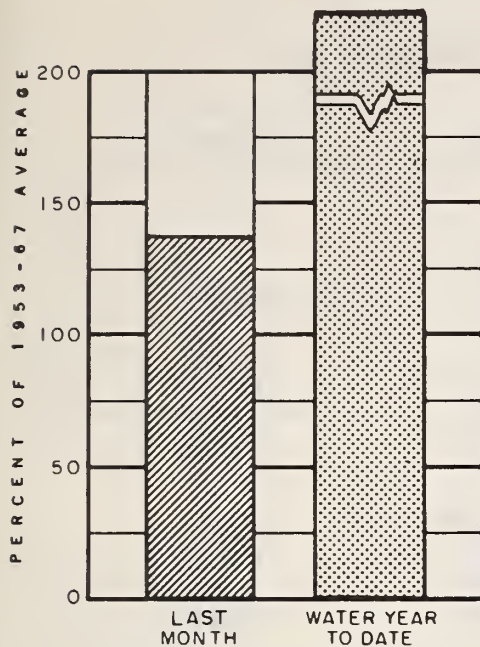
1971 would be described as an excellent water year and, with all of the stored supplies available in Oregon reservoirs at this time, prospects for 1972 look good also.

\*Provisional data furnished by the U. S. Geological Survey and Oregon State Engineer.

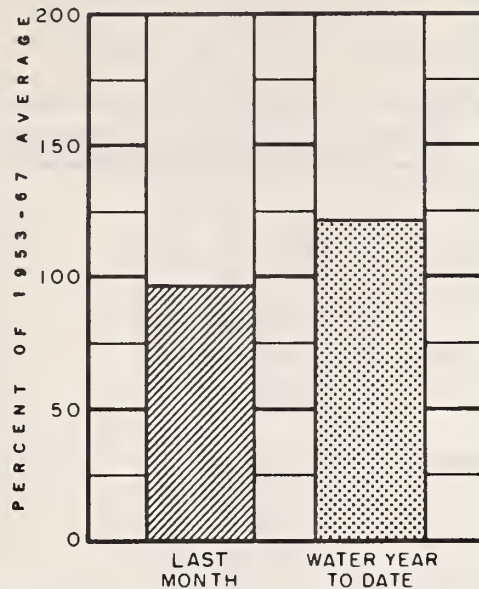


# CURRENT OREGON STREAMFLOW

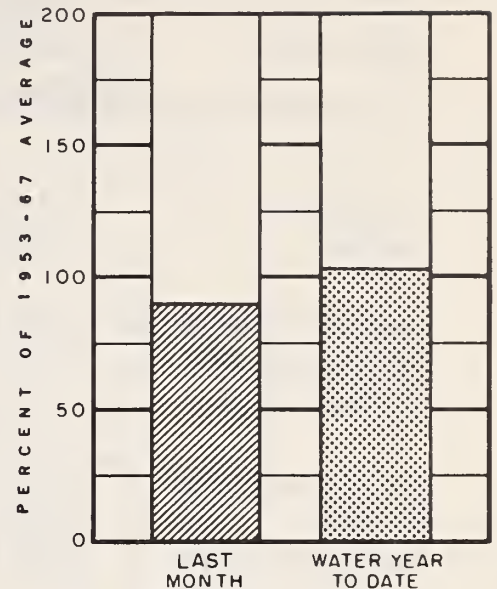
October 1, 1971



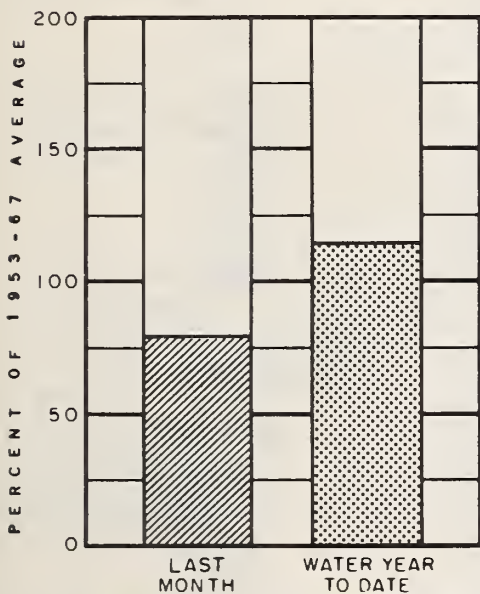
**Owyhee Lake net inflow**



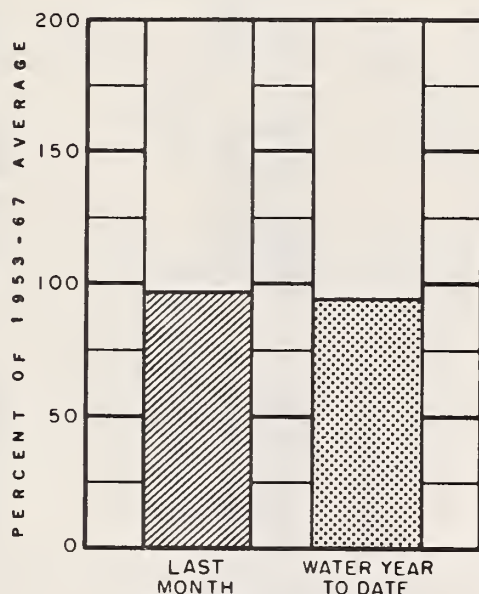
**Grande Ronde at La Grande**



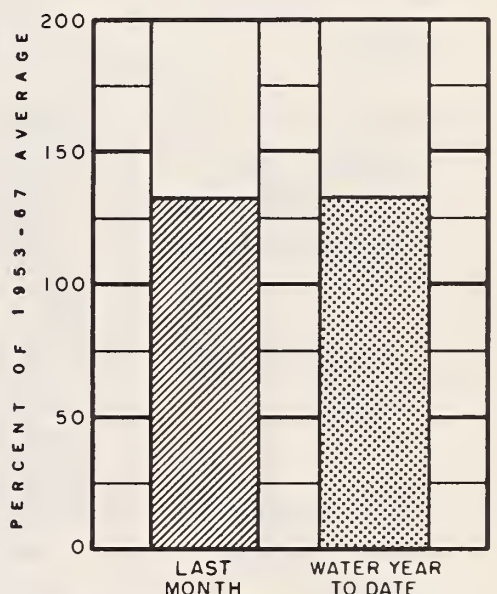
**Umatilla at Pendleton**



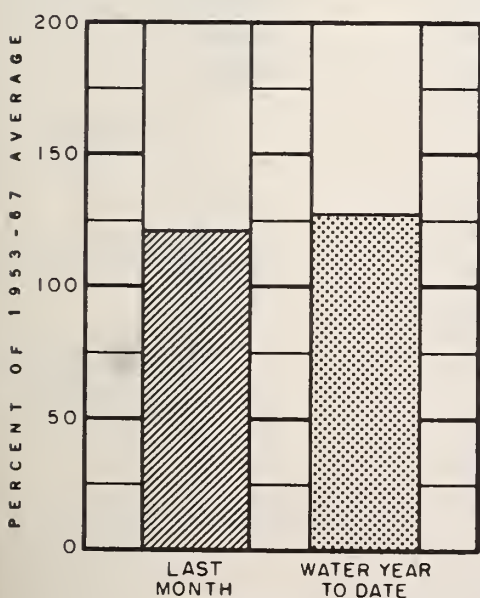
**John Day at Service Creek**



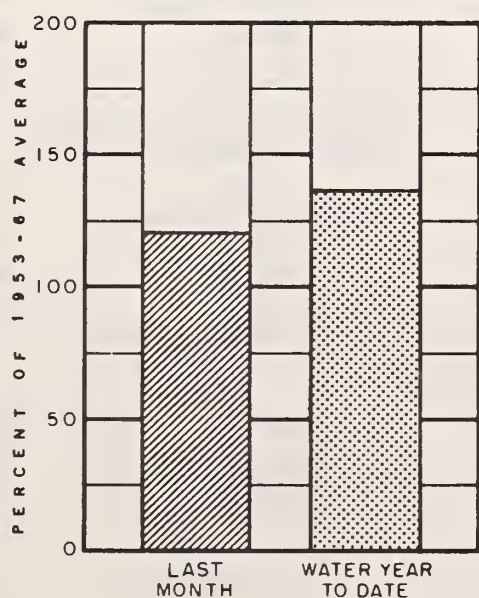
**Deschutes at Moody**



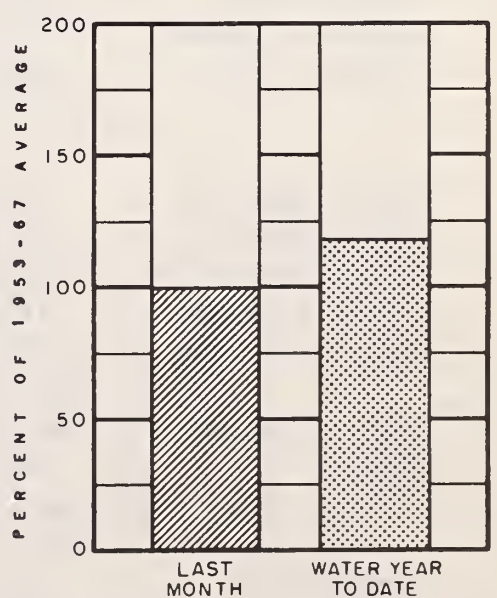
**Mid. Fk. Willamette below No. Fk.**



**Umpqua near Elkton**



**Rogue at Raygold**



**Upper Klamath Lake net inflow**

# STATUS OF RESERVOIR STORAGE, OCTOBER 1, 1971

| RESERVOIR                      | USABLE<br>CAPACITY<br>(Thous. A.F.) | THOUSANDS ACRE FEET IN STORAGE ABOUT OCT. 1 |       |                            |
|--------------------------------|-------------------------------------|---|-------|----------------------------|
|                                |                                     | 1971  | 1970  | 15-Year Average<br>1953-67 |
| <u>UPPER COLUMBIA DRAINAGE</u> |                                     |   |       |                            |
| Antelope                       | 70.0                                |   | 17.2  | 6.9                        |
| Owyhee                         | 715.0                               | 471.2                                       | 485.9 | 281.9                      |
| Beulah Reservoir               | 60.0                                | 15.1  | 10.2  | 8.1                        |
| Bully Creek                    | 30.0                                | 6.4   | 12.6  | 6.4                        |
| Warm Springs                   | 191.0                               | 99.6  | 110.7 | 45.6                       |
| Phillips Lake                  | 73.5                                | 46.8  | 48.0  | - -                        |
| Unity                          | 25.2                                | 1.7   | 1.0   | 2.7                        |
| Wallowa Lake                   | 37.5                                | 19.4  | 12.6  | 15.4                       |
| <u>LOWER COLUMBIA DRAINAGE</u> |                                     |   |       |                            |
| Cold Springs                   | 50.0                                | 4.1   | 4.0   | 2.6                        |
| McKay                          | 73.8                                | 16.8  | 15.4  | 6.1                        |
| Ochoco                         | 47.5                                | 26.4  | 22.1  | 15.0                       |
| Prineville                     | 153.0                               | 103.7                                       | 100.4 | 103.0                      |
| Crane Prairie                  | 55.3                                | 20.2  | 19.4  | 22.9                       |
| Crescent Lake                  | 86.9                                | 46.8  | 24.0  | 33.9                       |
| Wickiup                        | 200.0                               | 113.8                                       | 8.8   | 45.6                       |
| Cottage Grove                  | 30.0                                | 0.0   | 5.3   | 5.5                        |
| Cougar                         | 155.2                               | 85.9  | 80.1  | - -                        |
| Detroit                        | 299.9                               | 198.8                                       | 145.0 | 193.0                      |
| Dorena                         | 70.5                                | 23.9  | 8.8   | 7.2                        |
| Fall Creek                     | 115.0                               | 20.5  | 6.3   | - -                        |
| Fern Ridge                     | 94.2                                | 78.0  | 61.2  | 50.7                       |
| Foster                         | 30.0                                | 25.1  | 25.0  | - -                        |
| Green Peter                    | 270.0                               | 125.1                                       | 83.3  | - -                        |
| Hills Creek                    | 200.0                               | 102.2                                       | 47.4  | 124.7                      |
| Lookout Point                  | 337.2                               | 203.8                                       | 246.2 | 213.4                      |
| Timothy Lake                   | 61.7                                | 60.0  | 58.4  | 58.6                       |
| <u>WEST COAST DRAINAGE</u>     |                                     |   |       |                            |
| Fourmile Lake                  | 16.1                                | 9.0   | 3.1   | 6.7                        |
| Fish Lake                      | 7.8                                 | 5.8   | 3.6   | 2.4                        |
| Howard Prairie                 | 60.0                                | 50.5  | 46.8  | 33.6                       |
| Hyatt Prairie                  | 16.1                                | 12.4  | 10.4  | 7.9                        |
| Emigrant Lake                  | 39.0                                | 7.5   | 5.6   | 9.4                        |
| Upper Klamath                  | 584.0                               | 448.9                                       | 299.1 | 307.3                      |
| Gerber                         | 94.0                                | 55.6  | 47.2  | 27.1                       |
| Clear Lake                     | 440.2                               | 284.9                                       | 268.7 | 168.6                      |
| Cottonwood                     | 8.7                                 | 0.6   | 1.0   | 0.4                        |
| Drews                          | 63.0                                | 36.4  | 32.2  | 24.0                       |



**SOIL MOISTURE** as of October 1, 1971

| DRAINAGE BASIN and/or STATION                                  |           | Profile (Inches) |          | Date of Survey | Soil Moisture (Inches) |           |         |
|--|-----------|------------------|----------|----------------|------------------------|-----------|---------|
| Name   | Elevation | Depth            | Capacity |                | This Year              | Last Year | Average |
| OWYHEE, MALHEUR WATERSHEDS                                     |           |                  |          |                |                        |           |         |
| Bear Creek (Nev.)  | 7800      | 72               | 16.8     |                |                        |           |         |
| Big Bend (Nev.)  | 6700      | 48               | 16.7     | 9/18           | 11.2                   | 9.2       | - -     |
| Blue Mtn. Springs  | 5900      | 42               | 16.9     | 9/28           | 5.0                    | 5.5       | 5.9     |
| Crane Prairie  | 5375      | 48               | 18.2     | 9/28           | 14.7                   | 14.8      | 14.6    |
| Folly Farm   | 4450      | 30               | 12.5     |                |                        | 7.8       | - -     |
| Jack Cr., Lower (Nev.)   | 6800      | 48               | 8.6      | 9/13           | 5.1                    | 6.4       | - -     |
| Jordan Valley  | 4390      | 48               | 19.3     |                |                        | - -       | 14.4    |
| Mud Flat (Ida.)  | 5500      | 48               | 12.8     |                |                        |           |         |
| Rodeo Flat (Nev.)  | 6800      | 42               | 11.0     | 9/13           | 5.1                    | 5.9       | - -     |
| Taylor Canyon (Nev.)   | 6200      | 48               | 15.1     | 9/13           | 7.8                    | 8.0       | - -     |
| Triangle (Ida.)  | 5150      | 48               | 16.6     |                |                        |           |         |
| BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS           |           |                  |          |                |                        |           |         |
| Blue Mtn. Summit   | 5100      | 36               | 16.8     | 10/1           | 8.3                    | 8.6       | 7.7     |
| Dooley Mountain  | 5430      | 36               | 9.2      | 10/1           | 2.7                    | 2.3       | 3.0     |
| Emigrant Springs   | 3925      | 48               | 22.3     | 9/24           | 18.0                   | 19.4      | 12.9    |
| Ladd Summit  | 3730      | 48               | 18.9     | 9/27           | 9.0                    | 9.3       | 8.9     |
| Moss Springs   | 5850      | 42               | 25.8     | 9/29           | 11.4                   | 13.9      | - -     |
| Tollgate   | 5070      | 48               | 23.6     | 9/20           | 10.8                   | 11.1      | 14.4    |
| UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS |           |                  |          |                |                        |           |         |
| Battle Mtn. Summit   | 4340      | 48               | 13.8     | 9/27           | 10.7                   | 10.0      | 9.3     |
| Emigrant Springs   | 3925      | 48               | 22.3     | 9/24           | 18.0                   | 19.4      | 12.9    |
| Tollgate   | 5070      | 48               | 23.6     | 9/20           | 10.8                   | 11.1      | 14.4    |
| UPPER JOHN DAY WATERSHEDS                                      |           |                  |          |                |                        |           |         |
| Battle Mtn. Summit   | 4340      | 48               | 13.8     | 9/27           | 10.7                   | 10.0      | 9.3     |
| Beech Creek  | 4800      | 48               | 21.3     | 9/28           | 6.8                    | 7.2       | 9.8     |
| Blue Mountain Springs  | 5900      | 42               | 16.9     | 9/29           | 5.0                    | 5.5       | 5.9     |
| Blue Mountain Summit   | 5100      | 36               | 16.8     | 10/1           | 8.3                    | 8.6       | 7.7     |
| Derr   | 5670      | 24               | 9.0      |                |                        | 4.2       | 4.1     |
| Marks Creek  | 4540      | 36               | 14.1     |                |                        | 9.0       | 9.0     |
| Snow Mountain  | 6300      | 48               | 16.7     | 9/29           | 11.5                   | 9.9       | 9.7     |
| Starr Ridge  | 5150      | 36               | 10.6     | 9/28           | 7.3                    | 7.2       | 7.3     |
| Williams Ranch   | 4500      | 42               | 17.9     | 9/28           | 14.6                   | 14.9      | 14.5    |
| UPPER DESCHUTES, CROOKED WATERSHEDS                            |           |                  |          |                |                        |           |         |
| Derr   | 5670      | 24               | 9.0      |                |                        | 4.2       | 4.1     |
| Marks Creek  | 4540      | 36               | 14.1     |                |                        | 9.0       | 9.0     |
| Snow Mountain  | 6300      | 48               | 16.7     | 9/29           | 11.5                   | 9.9       | 9.7     |
| HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS                  |           |                  |          |                |                        |           |         |
| Cooper Spur  | 3490      | 72               | 26.4     | 9/28           | 6.3                    | 7.7       | - -     |
| KLAMATH WATERSHEDS   |           |                  |          |                |                        |           |         |
| Bly Mountain   | 5090      | 42               | 14.0     | 10/1           | 8.9                    | 8.2       | 8.1     |
| LAKE COUNTY, GOOSE LAKE WATERSHEDS                             |           |                  |          |                |                        |           |         |
| Camas Creek  | 5720      | 42               | 14.5     | 9/28           | 8.2                    | 9.5       | 8.8     |
| Quartz Mountain  | 5320      | 48               | 15.3     | 9/24           | 5.3                    | 5.1       | 5.6     |
| HARNEY BASIN WATERSHEDS  |           |                  |          |                |                        |           |         |
| Blue Mountain Spring   | 5900      | 42               | 16.9     | 9/28           | 5.0                    | 5.5       | 5.9     |
| Fish Creek   | 7900      | 48               | 15.0     | 9/22           | 7.1                    | 7.5       | 8.2     |
| Folly Farm   | 4450      | 30               | 12.5     |                |                        | 7.8       | - -     |
| Silvies  | 6900      | 48               | 16.4     | 9/22           | 11.0                   | 11.8      | 11.6    |
| Snow Mountain  | 6300      | 48               | 16.7     | 9/29           | 11.5                   | 9.9       | 9.7     |
| Starr Ridge  | 5150      | 36               | 10.6     | 9/28           | 7.3                    | 7.2       | 7.3     |
| Willow-Bald  | 5000      | 24               | 6.6      | 9/29           | 4.2                    | 3.4       | 3.4     |





# The Following Organizations Cooperate in the Oregon Snow Survey Work

## STATE

- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil and Water Conservation Districts of Oregon

## COUNTY

- Douglas County Water Resources Survey

## FEDERAL

- Department of Agriculture
  - Cooperative Extension Service
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Land Management
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
- Department of National Defense
  - Corps of Army Engineers

## PUBLIC UTILITIES

- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

## MUNICIPALITIES

- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

## IRRIGATION DISTRICTS

- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Hood River Irrigation District
- Jordan Valley Irrigation District
- Juniper Flat Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- Middle Fork Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warm Springs Irrigation District

## PRIVATE ORGANIZATIONS

- The Crag Rats, Hood River, Oregon

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SOIL CONSERVATION SERVICE  
1218 S.W. WASHINGTON ST.  
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